



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/628,641

07/28/2003

Mark A. Johnson

RD-26320-6

4881

41838

7590

06/14/2004

GENERAL ELECTRIC COMPANY (PCPI)

C/O FLETCHER YODER

P. O. BOX 692289

HOUSTON, TX 77269-2289

EXAMINER

HOLLINGTON, JERMELE M

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 06/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/628,641	Applicant(s) JOHNSON ET AL.	
	Examiner Jermele M. Hollington	Art Unit 2829	<i>Re</i>

-- **Th MAILING DATE of this communication appears on the cover sheet with the correspond nc address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-30 and 45-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4-11, 13, 16, 17, 19, 22, 23, 25, 28, 29, 45-47, 49-51, 53, 54 and 56-60 is/are rejected.
- 7) ☒ Claim(s) 2, 3, 12, 14, 15, 18, 20, 21, 24, 26, 27, 30, 48, 52, 55 and 61 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

1. Claim 6 is objected to because of the following informalities: the claim read, “the sensor is a human body.” However, the examiner believes that the claim should read --the object is a human body--. This is base on the specification on page 4, lines 22-24 and page 5, lines 5-12. Appropriate correction is required.

### *Claim Rejections - 35 USC § 101*

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 6 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claiming of “a human body” is considered to be a non-statutory subject matter.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Klotz, Jr. et al. (5651044).

Regarding claim 1, Klotz, Jr. et al disclose [see Figs. 1-2] a method for detecting motion of an object (subject 50) using a capacitance based sensing (capacitive sensing processor 250) and control system control system 200), said method comprising the steps of: sensing [via

Art Unit: 2829

capacitive sensing processor 250] a presence of object (50) based on measured capacitance the between a sensor (sensor plate 300 shown in Fig. 2) and the object (50) [see col. 2, lines 4-8 and col. 8, lines 11-13]; sensing [via capacitive sensing processor 250] a change in capacitance of the object (50) [see col. 6, lines 21-24]; and adjusting operation of the control system (200) based upon said sensed capacitance change [see col. 3, lines 48-54 and col. 4, lines 19-36].

Regarding claim 4, Klotz, Jr. et al disclose said step of sensing a change in capacitance further comprises the step of sensing changes in the geometry of the object (50) [see col. 4, lines 7-36].

Regarding claim 5, Klotz, Jr. et al disclose said step of sensing a change in capacitance further comprises the step of sensing proximity of the object (50) [see col. 3, lines 2-5].

Regarding claim 6, Klotz, Jr. et al disclose the object (50) is a human body [patient's body see col. 3, lines 20-22].

5. Claims 7-10, 45-47, 49, 53, and 56-60 are rejected under 35 U.S.C. 102(b) as being anticipated by Alihanka et al (4320766).

Regarding claims 7 and 45, Alihanka et al disclose [see Figs. 1-1B] a capacitance based proximity sensor (recording mattress 11) [see Abstract] comprising: a sensing surface of thin film conducting material (metal plate 12a) [see col. 4, lines 2-6]; and a non-conducting backing material (insulating plate 13) comprising a front side and a back side [not numbered but shown in Figs.], said sensing surface (12a) mounted on said front side.

Regarding claim 8, Alihanka et al disclose said sensor (11) further comprises an optional backing surface of conducting material (metal plate 12b) upon which said back side of said non-conducting backing material (13) is mounted [see Fig. 1 & 1A].

Regarding claim 9, Alihanka et al disclose said sensing surface (12a) is electrically coupled to a capacitance sensing circuit (monitoring and recording means 19) [via measuring amplifier 17].

Regarding claim 10, Alihanka et al disclose said optional backing surface (12b) is electrically coupled to a circuit (17) ground [see col. 4, lines 44-47].

Regarding claim 46, Alihanka et al disclose said apparatus configured to be at least one of a sensor (12a) and a detector (active layer 29)

Regarding claim 47, Alihanka et al disclose said sensing surface (12a) is electrically coupled to a capacitance sensing circuit (monitoring and recording means 19) [via measuring amplifier 17].

Regarding claim 49, Alihanka et al disclose said backing surface (12b) is electrically coupled to a circuit (17) ground [see col. 4, lines 44-47].

Regarding claim 53, Alihanka et al disclose said sensing material (12a) is configured to cover an outer surface of said apparatus [see Fig. 1].

Regarding claim 56, Alihanka et al disclose said sensing surface (12a) configured as a signal sensing zones (material 29b)[see Fig.1].

Regarding claim 57, Alihanka et al disclose said sensing zone (12a) is electrically coupled to a capacitance sensing circuit (monitoring and recording means 19) [via measuring amplifier 17].

Regarding claim 58, Alihanka et al disclose said sensing surface (12a) configured to have a plurality of sensing zones (materials 29a).

Regarding claim 59, Alihanka et al disclose said sensing zone (29a) is electrically coupled to a capacitance sensing circuit (monitoring and recording means 19) [via measuring amplifier 17].

Regarding claim 60, Alihanka et al disclose said sensing zones (29a) configured to be equidistant from one another [see Fig. 1A].

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 11, 13, 16-17, 19, 22-23, 25, 28-29, 50-51, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alihanka et al (4320766) in view of Boie et al (5337353).

Regarding claims 11, 13, 19, 25, 50-51 and 54, Alihanka et al disclose [see Figs. 1-1B] a capacitance based proximity sensor (recording mattress 11) [see Abstract]. However they do not

Art Unit: 2829

disclose the sensor is configured to be cylindrically shaped [claim 11], rectangularly shaped [claim 13], circularly shaped [claim 19] or irregularly shaped [claim 25] as claimed. Boie et al disclose a capacitive proximity sensor (10) this is configured to the shapes given above [see col. 2, lines 40-48 and Abstract]. Further, Boie et al teach that the addition of the different shapes is advantageous because it is desirable to be able to form sensing electrodes in various shapes and size depending on different applications that uses capacitance proximity sensors for different purposes. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the apparatus of Alihanka et al by having different sensor shapes as taught by Boie et al in order to form sensing electrodes in various shapes and size depending on different applications that uses capacitance proximity sensors for different purposes.

Regarding claims 16, 22 and 28, Alihanka et al in view of Boie et al [see above for details] disclose said sensing surface (12a) comprises a plurality of electrically connected rectangular shaped [claim 16], circularly shaped [claim 22] or irregularly shaped [claim 28] conductors (active layers 29a and 29b), said rectangular, circular or irregular conductors each having an inner dimension and an outer dimension [see Fig. 1B].

Regarding claims 17, 23 and 29, Alihanka et al disclose [see Figs. 1-1B] a capacitance based proximity sensor (recording mattress 11) [see Abstract] in combination of Boie et al disclose a capacitive proximity sensor (10) this is configured to be different shapes [see col. 2, lines 40-48 and Abstract]. However neither Alihanka et al nor Boie et al disclose sensor comprising three rectangular [claim 17], circular [claim 23], or irregular [claim 29] shaped conductors as claimed. It is well known to make duplicant shaped conductors where needed (see MPEP 2144.04; *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960)). It would have been

Art Unit: 2829

obvious to a person having ordinary skill in the art at the time the invention was made to make the sensor of Alihanka et al or Boie et al to have three shape conductors since having three shaped conductors is a mere duplication of one conductor and it was held that mere duplication of parts has no patentable significance when the applicants have not disclosed that three shaped conductors solve any stated problem or is for any particular purpose.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hanna (3991746), Arkans (4152748), Duncan et al (4852443), Whipple, III et al (5805664), Ogino (5902255), Reinbold et al (6033370), Stewart et al (6295881), Danby et al (6541973) and Wise et al (6560804) disclose a method and apparatus for a capacitance proximity sensor.

10. Claims 2-3, 12, 14-15, 18, 20-21, 24, 26-27, 30, 48, 52, 55 and 61 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: regarding claim 2, the reason for the allowance of the claim is due to method step of measuring charge transfer to determine a relative capacitance of an object which, in the examiner's opinion, would not have been obvious to include the method step with the prior art.

Regarding claim 3, the reason for the allowance of the claim is due to method step of recalibrating a control system, which, in the examiner's opinion, would not have been obvious to include the method step with the prior art.



Art Unit: 2829

Regarding claim 12, the reason for the allowance of the claim is due to the specific structure of having a sensing material to cover the end surfaces of a cylinder, which, in the examiner's opinion, would not have been obvious to include the particular structure with the prior art.

Regarding claims 14, 20, 26 and 55, the reason for the allowance of the claim is due to the specific structure of having sensing surface to be a smaller surface area than a backing surface, which, in the examiner's opinion, would not have been obvious to include the particular structure with the prior art.

Regarding claims 15, 18, 21, 24, 27 and 30, the reason for the allowance of the claim is due to the specific shape dimension of the length and width of a sensor.

Regarding claim 48, the reason for the allowance of the claim is due to the specific capacitance measurement of a capacitive sensing circuit of 2500pF.

Regarding claim 52, the reason for the allowance of the claim is due to the specific shape side of an irregular shape sensor.


Regarding claim 61, the reason for the allowance of the claim is due to the specific structure of having a sensing zones to partially cover the surface of the apparatus, which, in the examiner's opinion, would not have been obvious to include the particular structure with the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jermele M. Hollington whose telephone number is (571) 272-1960. The examiner can normally be reached on M-F (9:00-4:30 EST) First Friday Off.

Art Unit: 2829

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (517) 272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jermele M. Hollington  
Examiner  
Art Unit 2829

JMH  
June 7, 2004